

REMARKS

The present invention is a display device for displayed data corresponding to a colored image with relative dark and light regions, a computer program for driving a processor configured to provide drive signals for a display device which displays data corresponding to a colored image with relative dark and light regions and a method of displaying image data corresponding to a colored image with relatively dark and light regions. A display device for display data corresponding to a colored image with relative dark and light regions in accordance with an embodiment of the invention provides a visual representation of the image, without being eliminated by a separately energizable illumination source as illustrated for example, in Fig. 3, configured so that relatively dark regions are displayed lighter than indicated by image data to compensate for image darkening in the visual representation of the image produced by the display 5 provided by a non-linear characteristic of the display. The utilization of a non-linear characteristic of the display is illustrated in Fig. 6 which is described as follows:

"The graph of the transfer function $f(I)$ is shown in Fig. 6, from which it will be seen that the function is non-linear. The locus 28 of the function is configured so that for image data I corresponding to the low intensity display image, the modified data I' corresponds to an increased display intensity, so as to lighten the displayed image. Thus, the transfer function $f(I)$ has the effect of compensating for the non-linear intensity response of the liquid crystal display (5).

Claims 1-4, 6-7, 9, 14 and 16-17 stand rejected under 35 U.S.C. §103 as being anticipated by U.S. Publication 2002/0176113 (Edgar). With respect to claims 1, 14, 16, and 17, the Examiner reasons as follows.

As to claims 1, 14, 16 and 17, Edgar discloses a display device to display data corresponding to a colored image with relatively dark

and light regions so as to provide a visual representation of the image, without being illuminated by a separately energisable illumination source, configured so that the relatively dark regions are displayed lighter than indicated by the image data whereby to compensate for image darkening in the visual representation of the image produced by the display device. For example, Edgar discloses that the darker image (shadow image) is to be brighten of the detail in the darker region (see page 2, pp [0029], page 6, pp [0030], also see Fig.6).

This ground of rejection is traversed for the following reasons.

Independent claims 1, 16 and 17 each substantively recite that the relatively dark regions are displayed lighter than indicated by image data to compensate for image darkening in the visual representation of the image produced by the display provided by non-linear characteristics of the display. The recitation of non-linear characteristics of the display is supported by the subject matter discussed above with respect to Fig. 6. This subject matter has no counterpart in Edgar which, while disclosing in paragraph [0029], as referred to by the Examiner, that it is "helpful to brighten the detail in the shadow regions in decreasing the brightness of the bright regions without losing image detail" does not disclose the aforementioned limitation that the image produced by the display includes compensation for image darkening in the visual representation of the image produced by the display provided by non-linear characteristics of the display.

Moreover, there is no basis why a person of ordinary skill in the art would be led to modify the teachings of Edgar to arrive at the subject matter of claims 1-4, 6-7, 9, 14, and 16-17 except by impermissible hindsight.

Claims 5 and 10 stand rejected under 35 U.S.C. §103 as being unpatentable over Edgar further in view of United States Patent 5,406,305 (Shimomura et al). Shimomura et al has been cited as teaching an LCD

display device including a photo detector for detecting ambient light levels and the luminance of the display being selectively altered in accordance with the level of ambient light detected by the photodetector. The teachings of Shimamura et al do not cure the deficiencies noted above with respect to Edgar.

Claims 8, 11-13 and 15 stand rejected under 35 U.S.C. §103 as being unpatentable over Edgar in view of United States Patent 6,614,498 (Tanaka et al). Tanaka et al has been cited as teaching an LCD display which can be of a reflected type and can be used for a videophone.

Newly submitted claims 18-20 further limit claims 1-3 in reciting a display device wherein the display device is a reflective display. This subject matter is supported by the reflective layer 25 in Fig. 3 and further by the Abstract. Newly submitted claims 18-20 are patentable for the reasons set forth above.

In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance thereof is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in fees due in connection with the

filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (1344.41091TRN) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

A handwritten signature in black ink, appearing to read "Donald E. Stout", is written over a horizontal line.

Donald E. Stout
Registration No. 26,422
(703) 312-6600

DES:dlh